We claim:

1. An active pixel sensor array sampling system comprising:

at least one video circuit that generates a video voltage from each one of a group of pixels; and

at least one reset circuit that generates a reset voltage associated with each one of the pixels in the group of pixels;

wherein one of the at least one video circuit and at least one reset circuit comprises a closed loop sample and hold circuit.

2. The system of claim 1 wherein the closed loop sample and hold circuit comprises a single ended common source amplifier.

3. The system of claim 1 wherein the closed loop sample and hold circuit comprises a capacitor for holding one of the video voltages and the reset voltages.

4. The system of claim 3 wherein the sample and hold circuit includes an amplifier having an input and an output and switches that place its capacitor across its input and output.

5. The system of claim 1 wherein the pixels are arranged in columns and rows, the at least one video circuit comprises a plurality of video amplifiers, each video amplifier being associated with a respective column of pixels, and wherein the at least one reset circuit comprises a plurality of reset amplifiers, each reset amplifier being associated with one of the video amplifiers.

6. An active pixel sensor array sampling system comprising:

a video circuit that generates a video voltage from each one of a group of pixels; and

a reset circuit associated with the video circuit that generates a reset voltage associated with each one of the pixels in the group of pixels;

wherein the video circuit and the reset circuit each comprise a closed loop sample and hold circuit.

7. The system of claim 6 wherein the closed loop sample and hold circuit of each of the video circuit and reset circuit comprises a single ended common source amplifier.

8. The system of claim 6 wherein the video and reset closed loop sample and hold circuits each comprise a capacitor for holding the video voltage and the reset voltage respectively.

9. The system of claim 6 wherein each of the sample and hold circuits includes an amplifier having an input and an output and switches that place its capacitor across its input and output.

10. The system of claim 6 wherein the pixels are arranged in columns and rows and wherein the group of pixels is a column of pixels.

11. A video amplifier for use in sampling an active pixel sensor array, the video amplifier comprising a closed loop sample and hold circuit.

12. The video amplifier of claim 11 wherein the closed loop sample and hold circuit comprises a single ended common source amplifier.

13. The video amplifier of claim 12 wherein the closed loop sample and hold circuit comprises a capacitor for holding a video voltage.

14. The video amplifier of claim 13 wherein the sample and hold circuits further includes an amplifier having an input and an output and switches that place the capacitor across the input and output.

15. An integrated circuit including a video amplifier for use in sampling an active pixel sensor array, the video amplifier comprising a closed loop sample and hold circuit.

16. The integrated circuit of claim 15 wherein the closed loop sample and hold circuit comprises a single ended common source amplifier.

17. The integrated circuit of claim 15 wherein the closed loop sample and hold circuit comprises a capacitor for holding a video voltage.

18. The integrated circuit of claim 17 wherein the sample and hold circuits further include an amplifier having an input and an output and switches that place the capacitor across the input and output.

19. The integrated circuit of claim 15 wherein the integrated circuit is a CMOS integrated circuit.